Light efficiency:

140 Lumen/Watt

Light quality:

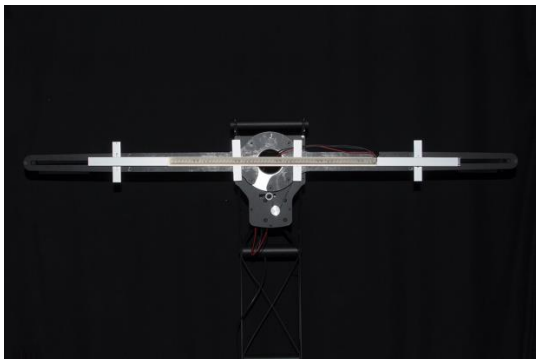
CRI: 82,2

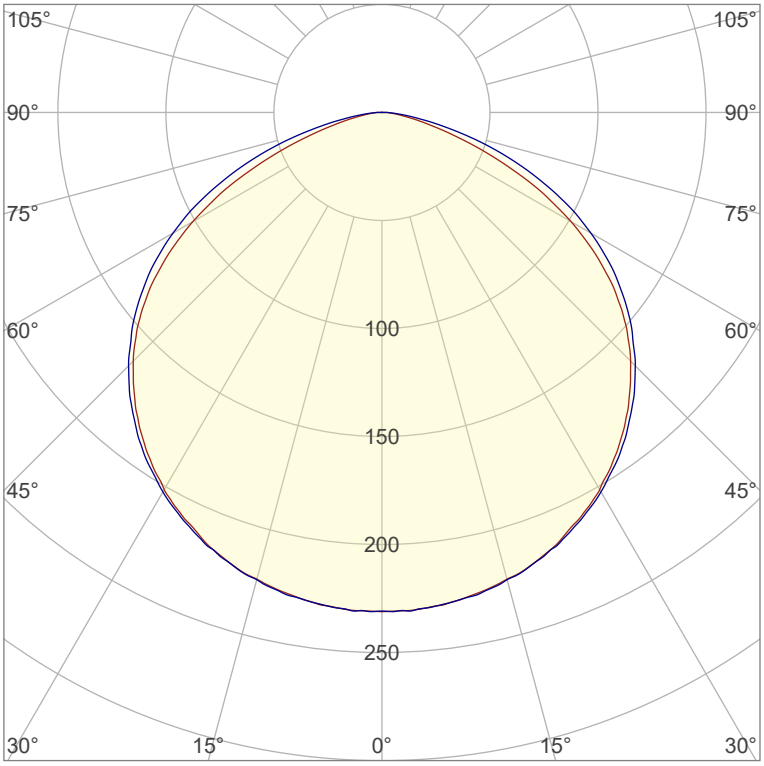
Color temperature:

2700 K

Output: 670 lm
Peak: 231 cd

Power: 4,8 W
PF: 1,0





CIE 1931
x: 0,460
y: 0,411

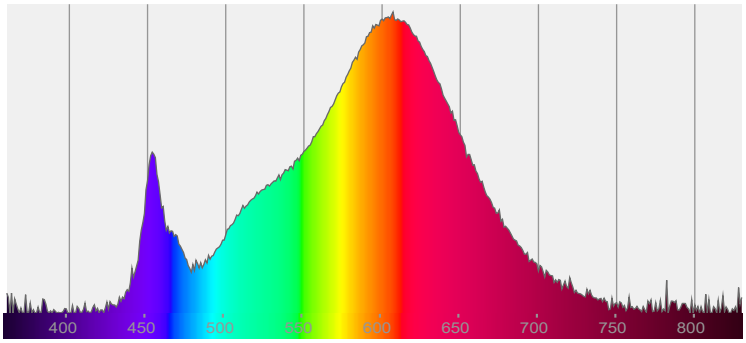
Product name:
Navigator-3_510mm_827_Cover-Flat-Transparent

Item number:
NP/L1C/14C/0510/827/CFT

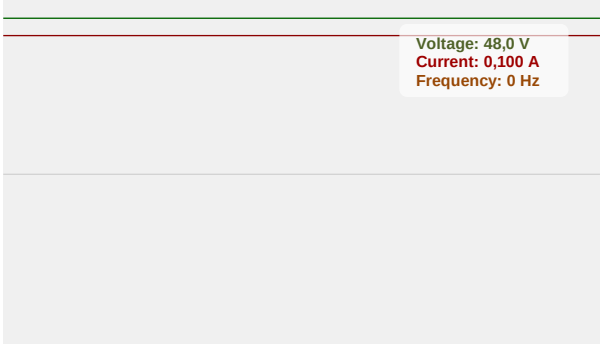
Date and time:
22.06.2022 13:07:19

Description:
Tolerances:
Lumen +/-4%
Candela +/-2,5%
Colour Temp +/-35 Kelvin
CRI +/-0,7
Angular Resolution: 1 Degree Step
Last Calibration 20-09-2021
Tester: Peter Ulrich
Test Site: Lichtlabor
Gaustrasse 13
55411 Bingen am Rhein

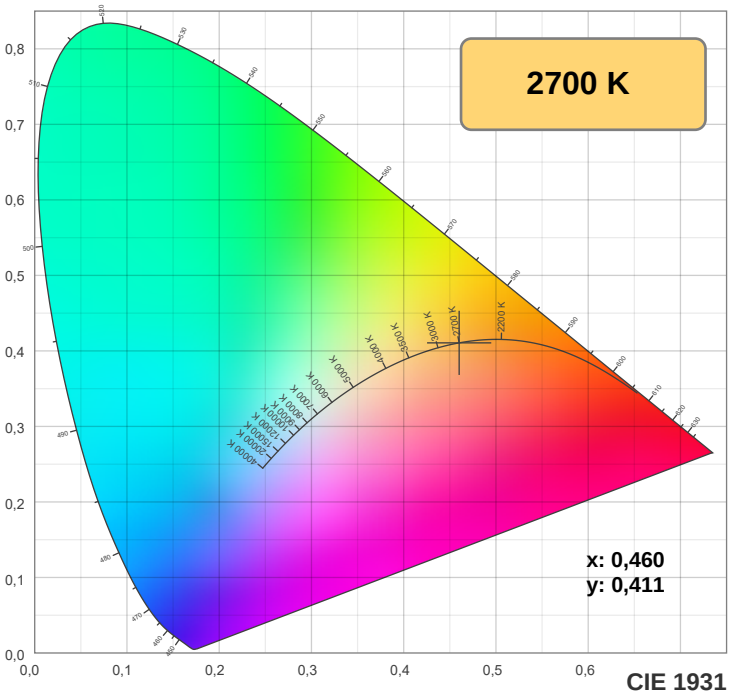
Spectra



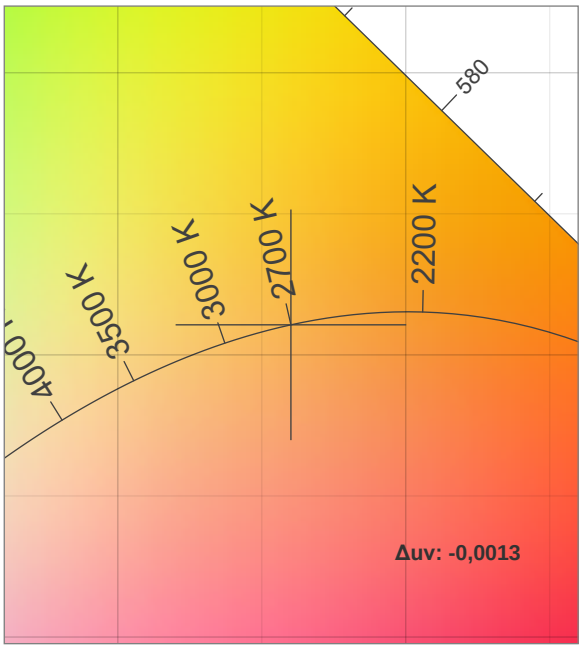
Power



Color details

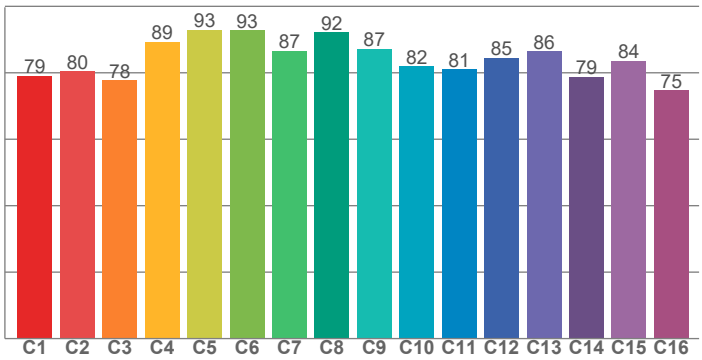


CIE 1931

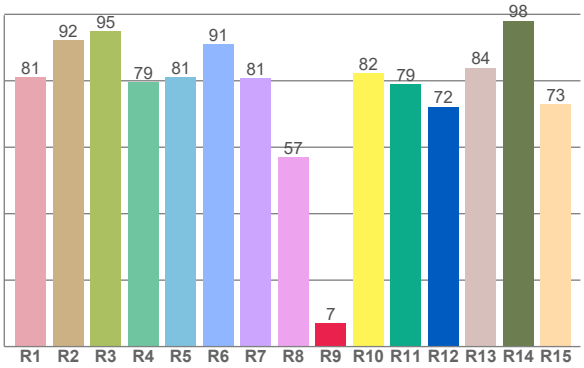


CIE 1931 ZOOM

TM30: 84,1



CRI: 82,2 (R1-R8)



CRI R values, only R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
81,1	92,2	94,9	79,5	81,2	91,0	80,8	57,0	7,1	82,3	79,0	72,2	83,9	98,1	73,0

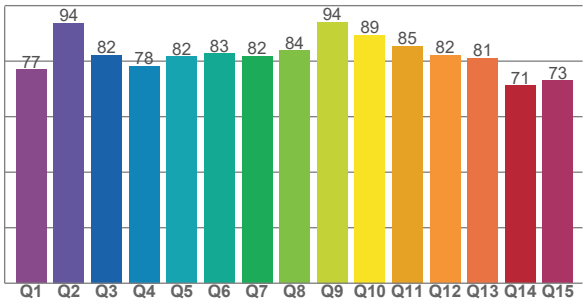
TM30 C values, 16 binned values out of total of 99 C values

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
79,0	80,4	77,7	89,3	92,9	92,8	86,6	92,2	87,2	81,9	81,0	84,5	86,4	78,7	83,6	74,7

CQS Q values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
77,0	93,7	82,3	78,2	81,6	82,7	81,9	83,9	94,1	89,4	85,4	82,1	81,1	71,2	73,0

CQS: 81,3



Color parameters

Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate	Color diviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2700 K	82,2	7,1	84,1	95,6	81,3	0,460	0,411	0,263	0,352	-0,0013

TM30 details

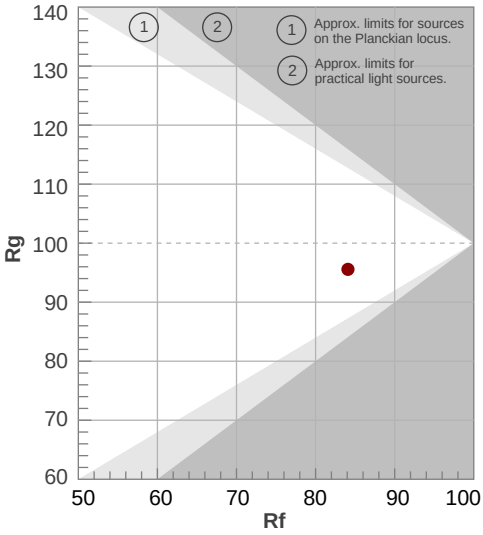
Rf 84,1

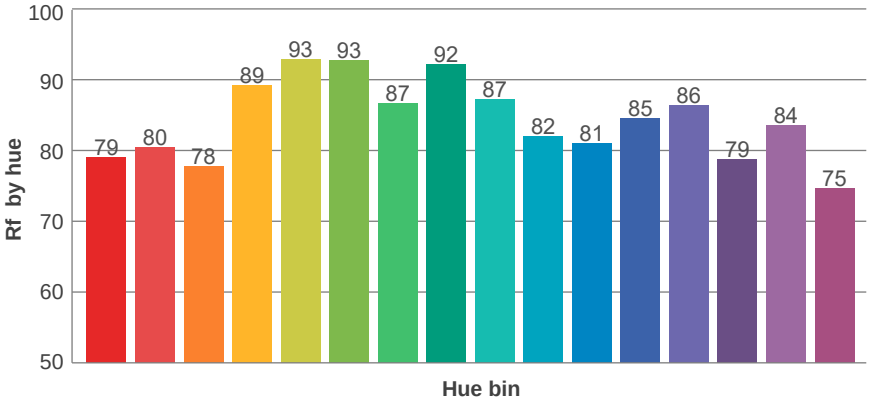
Fidelity index Rf

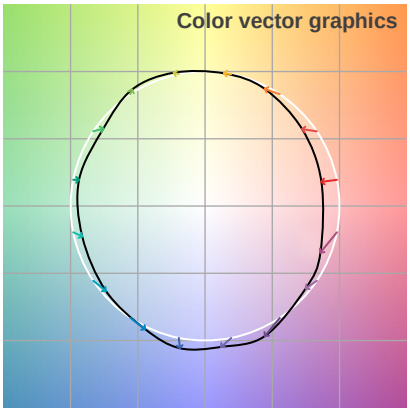
Rg 95,6

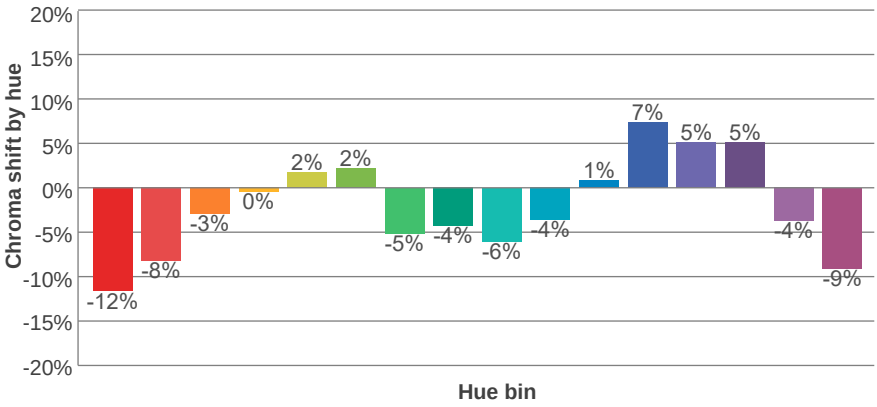
Gammut index Rg

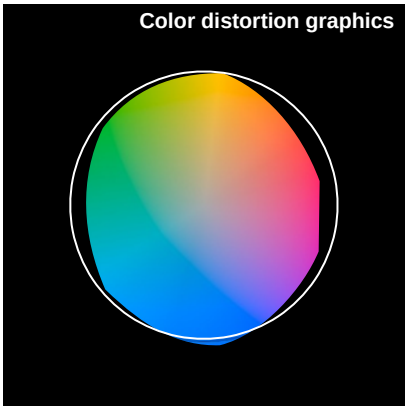
		Graphic shifts (%)	
Hue Bin	R_f	Chroma	Hue
1	79	-12%	1%
2	80	-8%	7%
3	78	-3%	11%
4	89	0%	5%
5	93	2%	4%
6	93	2%	-3%
7	87	-5%	-6%
8	92	-4%	-1%
9	87	-6%	4%
10	82	-4%	11%
11	81	1%	14%
12	85	7%	2%
13	86	5%	-9%
14	79	5%	-17%
15	84	-4%	-9%
16	75	-9%	-17%

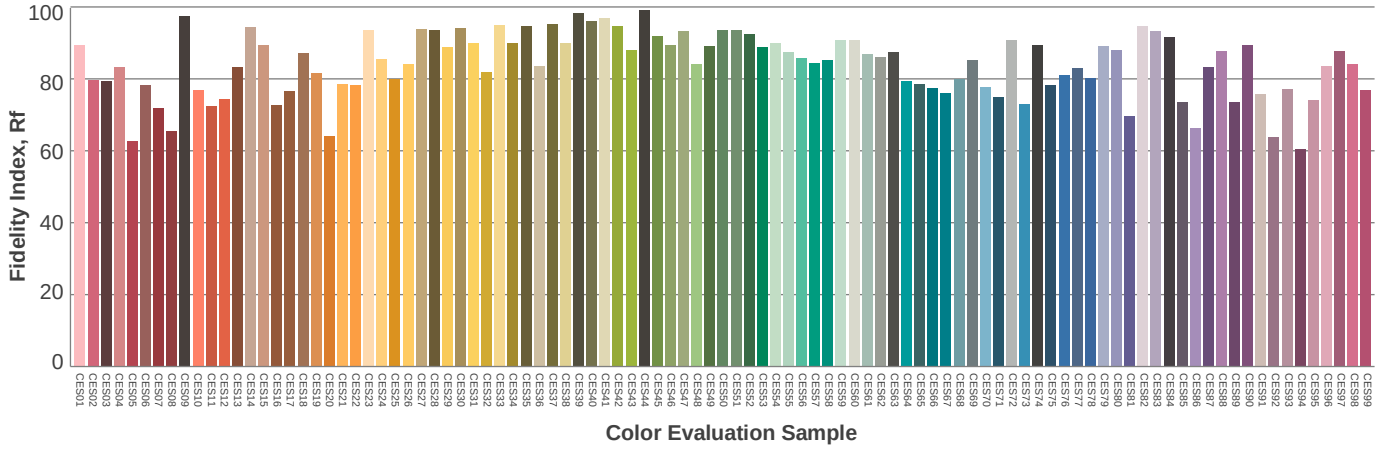




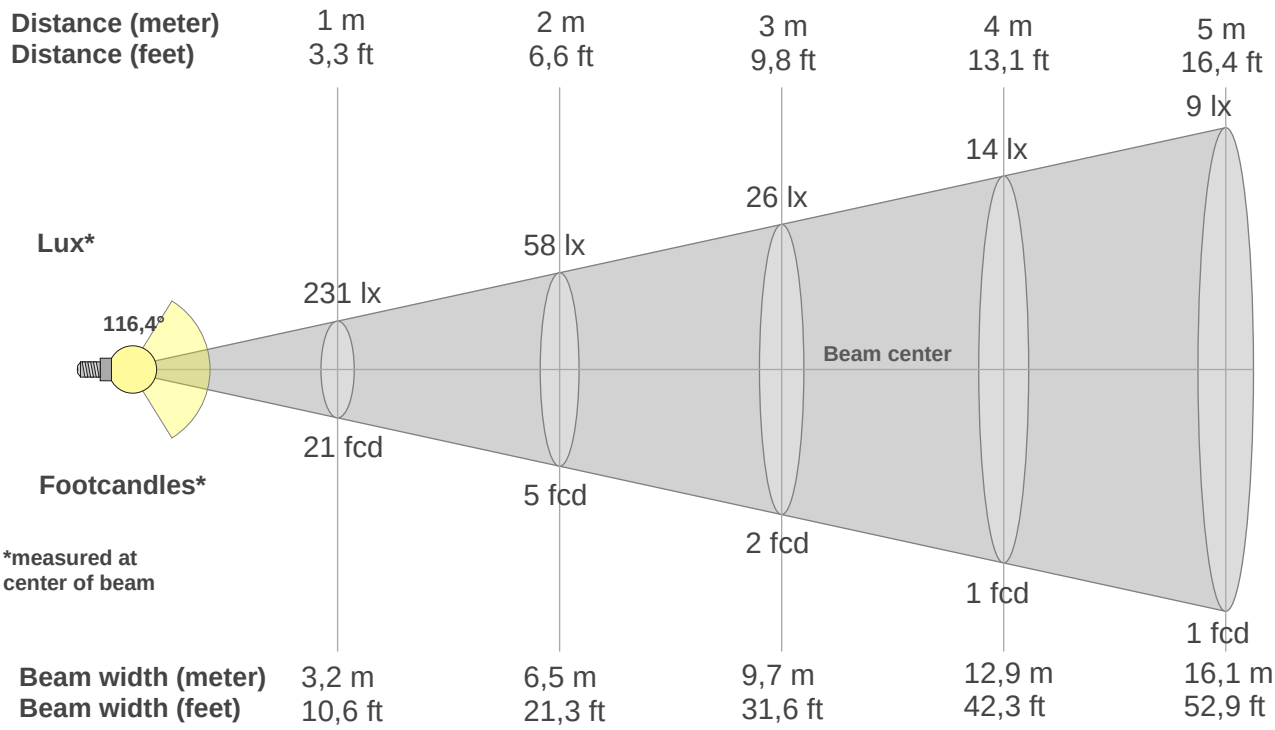








Beam details



Beam intensities from 1-20m

1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3,3ft	6,6ft	9,8ft	13,1ft	16,4ft	19,7ft	23ft	26,2ft	29,5ft	32,8ft	36,1ft	39,4ft	42,7ft	45,9ft	49,2ft	52,5ft	55,8ft	59,1ft	62,3ft	65,6ft
231lx	58lx	26lx	14lx	9lx	6lx	5lx	4lx	3lx	2lx	2lx	2lx	1lx	1lx	1lx	1lx	1lx	1lx	1lx	1lx
21,5fcd	5,4fcd	2,4fcd	1,3fcd	0,9fcd	0,6fcd	0,4fcd	0,3fcd	0,3fcd	0,2fcd	0,2fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd	0,1fcd

Intensities in 0° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
231	230	228	224	218	210	202	190	177	163	146	125	101	74	46	24	11	5	1	1
100%	100%	99%	97%	94%	91%	87%	82%	77%	70%	63%	54%	44%	32%	20%	11%	5%	2%	1%	1%

Intensities in 90° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
231	230	228	224	219	211	203	192	180	166	150	132	112	89	64	39	19	7	1	0
100%	100%	99%	97%	95%	91%	88%	83%	78%	72%	65%	57%	48%	38%	28%	17%	8%	3%	0%	0%

Intensities in 180° c-plane

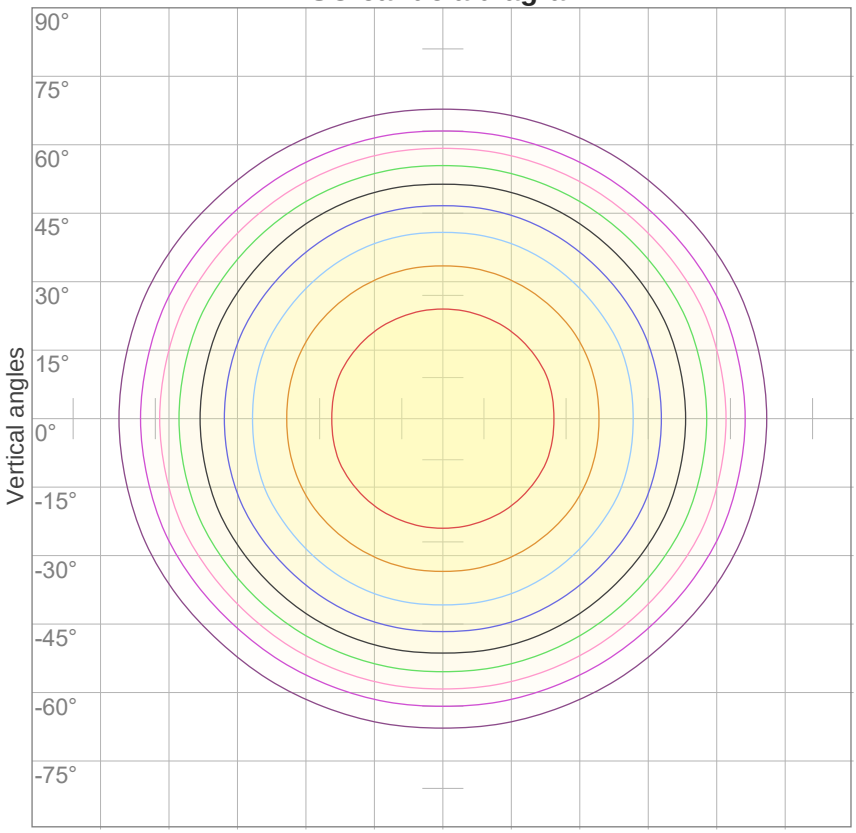
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
231	230	228	224	218	210	202	190	177	163	146	125	101	74	46	24	11	5	1	1
100%	100%	99%	97%	94%	91%	87%	82%	77%	70%	63%	54%	44%	32%	20%	11%	5%	2%	1%	1%

Intensities in 270° c-plane

0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
231	230	228	224	219	211	203	192	180	166	150	132	112	89	64	39	19	7	1	0
100%	100%	99%	97%	95%	91%	88%	83%	78%	72%	65%	57%	48%	38%	28%	17%	8%	3%	0%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
116,4°	**154,2°**	**170,7°**	**81,3%**	**54,7%**

ISO candela diagram



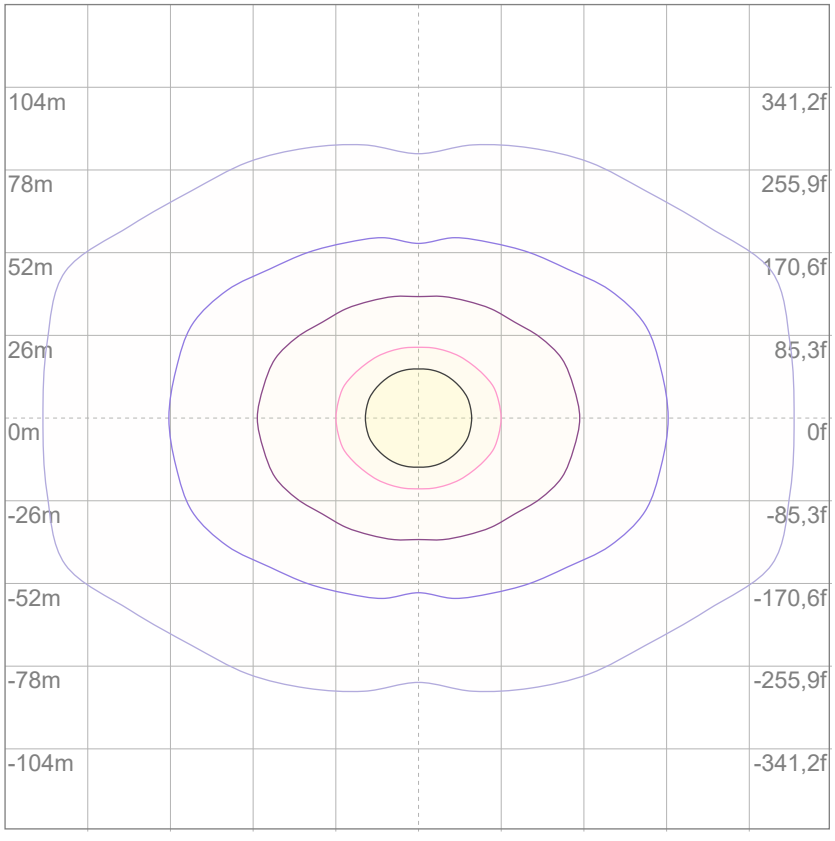
10%	23 cd
20%	46 cd
30%	69 cd
40%	92 cd
50%	116 cd
60%	139 cd
70%	162 cd
80%	185 cd
90%	208 cd

Conditions:

Number of c-planes: 16

Candela at center: 231 cd

ISO lux diagram



Mounting height: 10 meters (33 feet)

3%	69,3m lx
5%	0,116 lx
10%	0,231 lx
30%	0,693 lx
50%	1,16 lx

Conditions:

Number of c-planes: 16

Lux at center: 2,31 lx

Lux distribution on a surface when lamp is mounted at 10 meters from the surface.

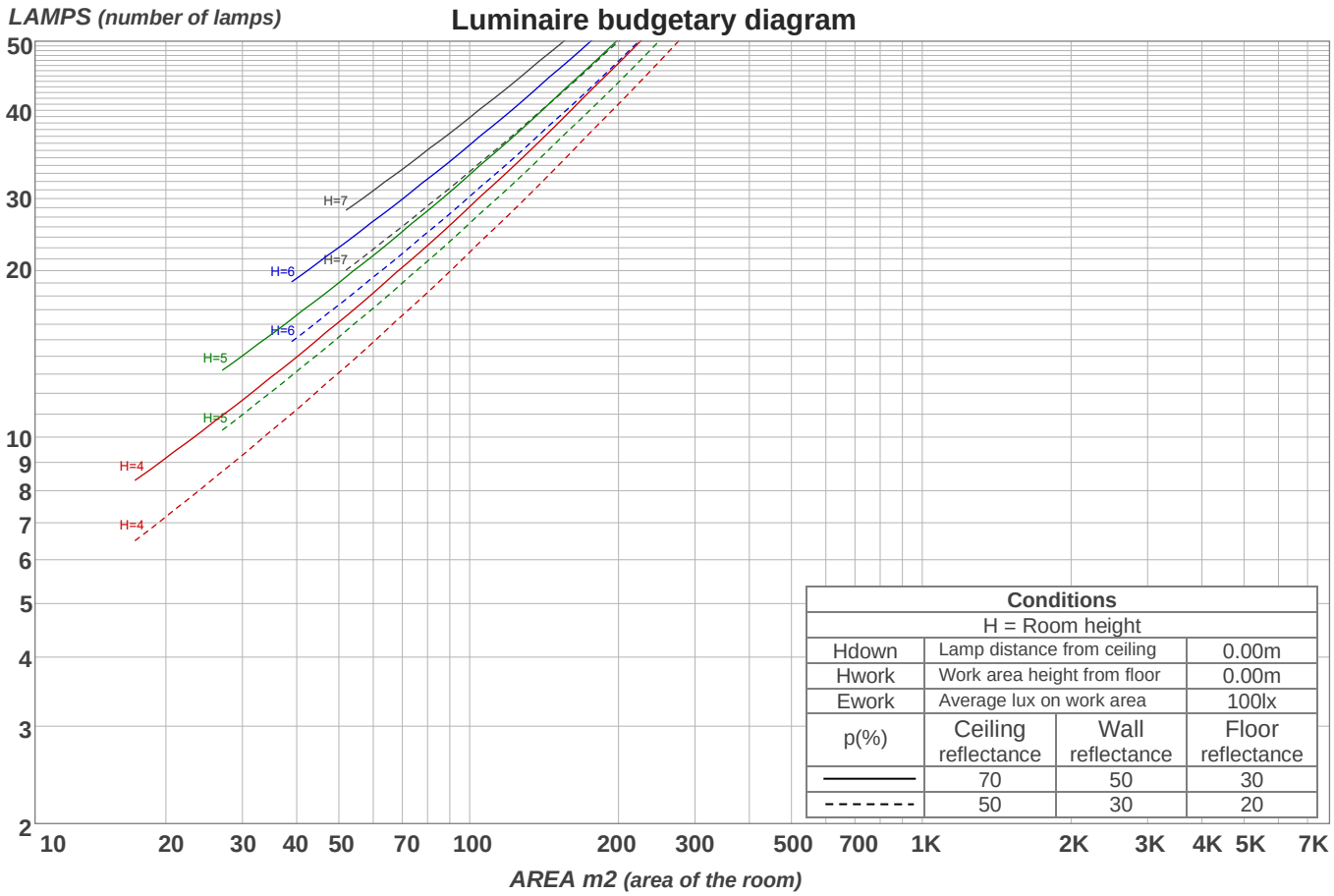
Glare Evaluation According to UGR

p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X	Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	22,1	23,3	22,3	23,6	23,8	23,0	24,2	23,2	24,5	24,7
	3H	22,9	24,1	23,3	24,4	24,6	24,3	25,5	24,7	25,8	26,0
	4H	23,0	24,2	23,4	24,5	24,7	24,7	25,9	25,1	26,2	26,5
	6H	23,1	24,2	23,4	24,4	24,8	25,0	26,1	25,3	26,3	26,7
	8H	23,1	24,1	23,4	24,4	24,8	25,1	26,1	25,4	26,4	26,8
	12H	23,1	24,0	23,4	24,4	24,8	25,1	26,0	25,4	26,4	26,8
4H	2H	22,7	23,8	23,1	24,1	24,4	23,4	24,6	23,8	24,8	25,1
	3H	23,7	24,6	24,0	25,0	25,4	24,9	25,9	25,3	26,2	26,7
	4H	23,8	24,7	24,3	25,1	25,7	25,4	26,3	25,8	26,7	27,2
	6H	23,9	24,7	24,4	25,1	25,5	25,7	26,5	26,2	26,9	27,2
	8H	23,9	24,7	24,4	25,0	25,4	25,7	26,5	26,2	26,9	27,3
	12H	23,9	24,5	24,4	24,9	25,4	25,8	26,4	26,3	26,8	27,3
8H	4H	24,0	24,7	24,5	25,1	25,5	25,4	26,2	25,9	26,6	26,9
	6H	24,1	24,7	24,6	25,1	25,7	25,8	26,4	26,3	26,8	27,4
	8H	24,1	24,6	24,6	25,2	25,8	25,9	26,4	26,4	26,9	27,6
	12H	24,1	24,6	24,7	25,1	25,7	26,0	26,4	26,5	26,9	27,5
12H	4H	23,9	24,6	24,4	25,0	25,5	25,4	26,0	25,9	26,4	26,9
	6H	24,1	24,6	24,6	25,1	25,8	25,8	26,3	26,3	26,8	27,5
	8H	24,1	24,6	24,7	25,1	25,7	25,9	26,3	26,5	26,8	27,4
Variation of the observer position for the luminaire distance S											
S = 1.0H		0,1 / -0,2					0,1 / -0,1				
S = 1.5H		0,4 / -0,7					0,2 / -0,3				
S = 2.0H		1,1 / -1,6					0,7 / -1,0				
Standard table		n/a					n/a				
Correction summand		n/a					n/a				
Corrected glare indices referring to 670 lm total luminous flux											

Coefficients of Utilization

Ceiling reflectance	80				70				50			30			10			0
Wall reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Floor reflectance	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	0
RCR	(RCR: Room Cavity Ratio)				Room Values are expressed as percentage of Lumens delivered to the task surface													
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	106	102	99	95	98	95	92	94	92	89	90	88	87	84
2	99	91	85	79	97	90	83	78	86	81	76	83	78	75	80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	70	66	62	60
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	57	53	51
5	76	63	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	40	38
7	65	52	43	37	63	51	43	37	49	42	36	48	41	36	46	40	36	34
8	61	47	39	33	59	46	38	33	45	38	32	44	37	32	43	36	32	30
9	57	43	35	29	55	43	35	29	41	34	29	40	34	29	39	33	29	27
10	53	40	32	27	52	39	32	27	38	31	26	37	31	26	36	30	26	24

Luminaire budgetary diagram

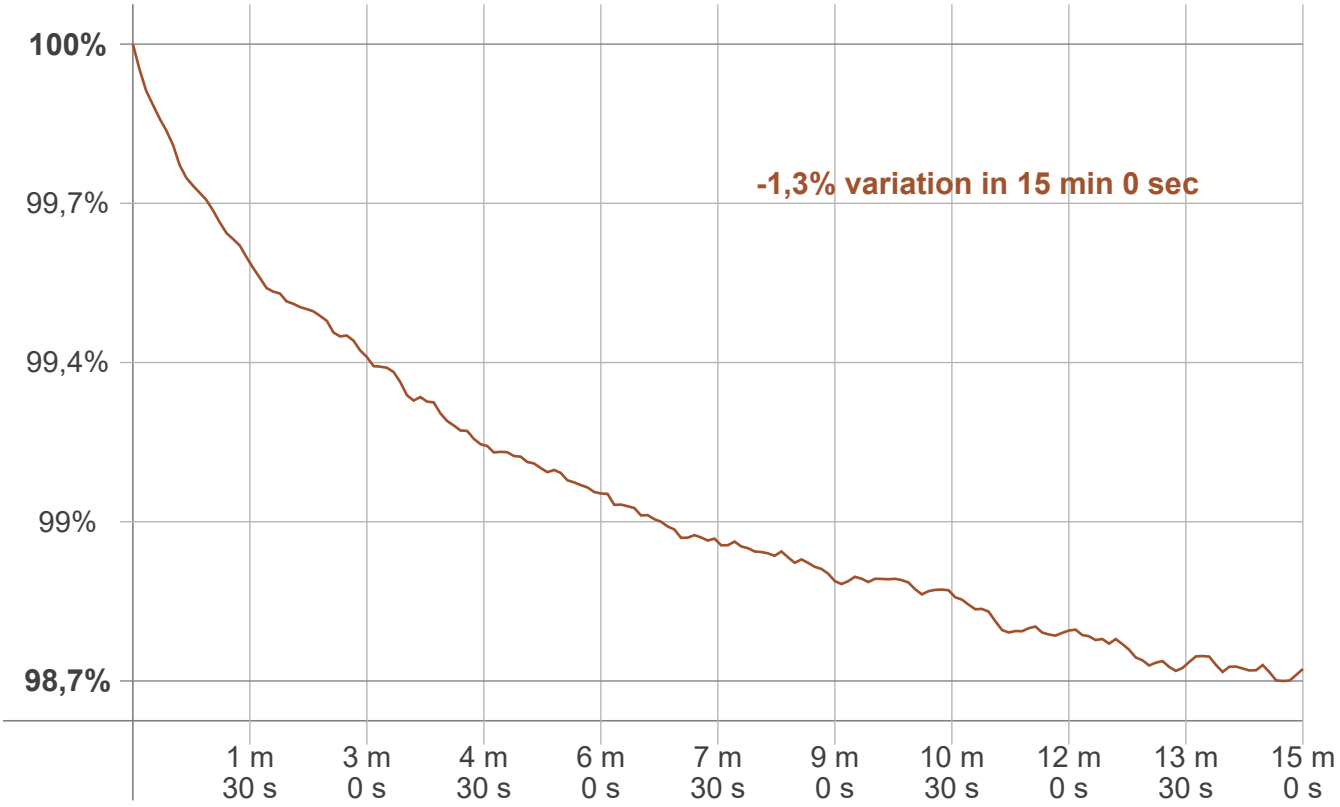


Zonal Lumen Summary

0°-10°	10°-20°	20°-30°	30°-40°	40°-50°	50°-60°	60°-70°	70°-80°	80°-90°
21,9 lm	63,3 lm	97,4 lm	120 lm	127 lm	115 lm	80,6 lm	34,4 lm	7,69 lm

90°-100°	100°-110°	110°-120°	120°-130°	130°-140°	140°-150°	150°-160°	160°-170°	170°-180°
0,831 lm	0,656 lm	0,448 lm	0,360 lm	0,216 lm	0,096 lm	0,070 lm	0,043 lm	0,015 lm

Warmup curve



Warmup result

Warmup time:	**Lamp stabilized in 15 min 0 sec**
Warmup variation	**-1,3%**

Warmup conditions

Stable period:	**15 min**
Stable change max:	**2,0%**
Minimum time:	**15 min**

Color temperature change

CCT start	CCT change	CCT end
2695 K	+5 K	2700 K

Output change

Output start	Output change	Output end
679 lm	-9 lm	670 lm